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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,688	06/06/2005	Michael Baldischweiler	WACHP002	4067

25920   7590   03/16/2009
MARTINE PENILLA & GENCARELLA, LLP
710 LAKEWAY DRIVE
SUITE 200
SUNNYVALE, CA 94085

EXAMINER
YAARY, MICHAEL D

ART UNIT	PAPER NUMBER
2193	

MAIL DATE	DELIVERY MODE
03/16/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/511,688	BALDISCHWEILER ET AL.
	Examiner	Art Unit	
	MICHAEL YAARY	2193	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 December 2008</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-3 and 11-27</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-3 and 11-27</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>12/29/2008</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-3 and 11-27 are pending in the application.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-3, 11-17 and 19-27 are rejected under 35 U.S.C. 102(e) as being

anticipated by Siska (US Pat. 6,263,429).

        Siska was cited in the previous office action dated 07/22/2008.

4.   **With respect to claims 1 and 17,** Siska discloses a method for optimizing(Col

8:1-5, "…the greatest compression…") compiler-generated program code intended for a

portable data carrier(Col 3:10-25, "…processor chip…",Col 7:18-30, "…a plurality of

interconnects to other components within a device/system…") having a processor

core(Col 7:19-30, "…contains an embedded processor…") and a first (Col 7:23-30,

"…non-cache memory…")and second memory area, (Col 7:23-35, "…cache memory

206…") comprising:

the first memory area being provided to receive the optimized program code,(Col 7:29-

40, "…The non-cache memory…for at least one program which can be further

subdivided into individual lines of code…") the second memory area being provided to

receive a predefined library having a multiplicity of library code fragments,(Col 7:25-40,

"…The cache memory preferably includes a Micro Code Area…") **wherein the**

predefined library is independent of the compiler-generated program code that is

to be optimized (via the program is separate from the MCA that stores the same

routines and has to call the MCA for invoking the routines) (col. 8, lines 6-34; see

also fig. 2 and fig. 4 wherein the program is stored separate from the MCA); and

the compiler-generated program code being searched for program code fragments **that**

perform the same function as a respective one of the library code fragments **(via**

searching for identical code fragments that match wherein one is stored in the

library thereby code fragments perform the same function as library code

fragments), (Col 7:42-58, "…searching a program for identical sequences of lines of

code …",Col 8:47-63, "…the program may be searched to identify sequences of lines of

code…") the program code fragments found thereby being replaced by respectively one

call of the corresponding library code fragment. (Col 8:1-20, "…by a microcall results in

the greatest compression…", Col 8:24-35, "…each sequence of lines of code in the

collection is replaced in the program by a microcall..." ,Col 9:60-67, "…each microcall

preferably contains an identification of the previously identified microroutine…").

5.   **With respect to claim 24,** Siska discloses a portable data carrier(Col 3:10-25,

"…processor chip…",Col 7:18-30, "…a plurality of interconnects to other components

within a device/system…") having a processor core, (Col 7:19-30, "…contains an

embedded processor…") a first memory area(Col 7:29-40, "…The non-cache

memory…for at least one program which can be further subdivided into individual lines

of code…") and a second memory area, (Col 7:25-40, "…The cache memory preferably

includes a Micro Code Area…") there being contained in the first memory area

optimized program code, (Col 7:29-40, "…The non-cache memory…for at least one

program which can be further subdivided into individual lines of code…")and there being

contained in the second memory area a library which is predefined independently of the

optimized program code(Col 7:25-40, "…The cache memory preferably includes a Micro

Code Area…") and has a multiplicity of library code fragments **wherein the predefined**

library is independent of the compiler-generated program code that is to be

optimized (via the program is separate from the MCA that stores the same

routines and has to call the MCA for invoking the routines) (col. 8, lines 6-34; see

also fig. 2 and fig. 4 wherein the program is stored separate from the MCA,Col

7:25-40, "…within which microroutines are suitably stored…") wherein the optimized

program code has been obtained from compiler-generated program code by searching

for program code fragments **that perform the same function as a respective one of**

the library code fragments **(via searching for identical code fragments that match**

wherein one is stored in the library thereby code fragments perform the same

function as library code fragments) (See also Col 7:42-58, "…searching a program

for identical sequences of lines of code …",Col 8:47-63, "…the program may be

searched to identify sequences of lines of code…") the program code fragments found

thereby being replaced by respectively one call of the corresponding library code

fragment. (Col 8:1-20, "…by a microcall results in the greatest compression…", Col

8:24-35, "…each sequence of lines of code in the collection is replaced in the program

by a microcall..." ,Col 9:60-67, "…each microcall preferably contains an identification of

the previously identified microroutine…").

6.   **With respect to claims 2, 19, and 25,** the rejection of claims 1, 17, and 24 are

incorporated respectively and further Siska discloses that a program code fragment is

replaced by a library code fragment only if both code fragments are identical in their

form as executable machine code. (Col 7:40-55, "searching a program for identical

sequences of lines of code...")

7.   **With respect to claims 11 and 20,** the rejection of claims 1 and 17 are

incorporated respectively and further Siska discloses that a program code fragment to

be replaced is replaced, at least if the program code fragment does not interfere with

the program flow, by a subroutine call instruction to the corresponding library code

fragment. (Col 8:1-15, "…by a microcall results in the greatest compression…each

sequence of lines of code in the collection is replaced in the program by a microcall to

the saved information…")

8.   **With respect to claims 12 and 21,** the rejection of claims 1 and 17 are

incorporated respectively and further Siska discloses that the compiler-generated

program code exists in the form of assembler source code, and the optimization

procedure is performed on a source code level. (Col 5:33-45, "…utilized on individual

code modules, linked executables, non-embedded processor programs...")

9.   **With respect to claims 13, 22 and 26,** the rejection of claims 1,17 and 24 are

incorporated respectively and further Siska discloses that the predefined library is

matched to at least one of the following: the hardware of the portable data carrier, an

operating system of the portable data carrier,(Col 8:35-50, "…Another criterion for

ending the compression processing…") and a compiler used in the generation of the

compiler-generated program code. (Col 5:35-50, "…utilized on individual code modules,

linked executables…")

10.   **With respect to claim 14,** the rejection of claim 1 is incorporated and further

Siska discloses that the first memory area is electrically programmable. (Col 13:20-35,

"…is compressed and then accessed via RAM,…")

11.   **With respect to claim 15,** the rejection of claim 1 is incorporated and further

Siska discloses that the second memory area is mask-programmable. (Col 13:10-20,

"…is stored in ROM…")

12.   **With respect to claim 16,** the rejection of claim 1 is incorporated and further

Siska discloses that the first memory area occupies more chip area per memory cell in

the portable data carrier than is occupied by the second memory area. (Col 13:10-30,

'…in an uncompressed format, in an area of ROM identified…")

13.   **With respect to claims 23 and 27,** the rejection of claims 17 and 24 are

incorporated respectively and further Siska discloses that the first memory area is

electrically programmable, (Col 13:20-35, "…is compressed and then accessed via

RAM,…") and the second memory area is mask-programmable, (Col 13:10-20, "…is

stored in ROM…") and the first memory area occupies more chip area per memory cell

in the portable data carrier than is occupied by the second memory area. (Col 13:10-30,

'…in an uncompressed format, in an area of ROM identified…")

Claim Rejections - 35 USC § 103

14.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

   (a) A patent may not be obtained though the invention is not identically disclosed or described as set
   forth in section 102 of this title, if the differences between the subject matter sought to be patented and
   the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

15.   Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Siska in

view of Wilkinson (US Pub. 2008/0115117).

        Wilkinson was cited in the previous office action dated 07/22/2008.

16.   **With respect to claim 18,** the rejection of claim 17 is incorporated and further,

Siska does not disclose that the program instructions additionally implement a compiler

for converting a high-level language source code into the compiler-generated program

code.

17.   Wilkinson discloses that the program instructions additionally implement a

compiler for converting a high-level language source code into the compiler-generated

program code(Col 28:claim 28:stepa), "...a compiler for compiling application source

programs written in high level language source code...") in an analogous system for the

purpose of translating high-level source code into assembly level or machine level

source code.

18.   Therefore, it would have been obvious to a person of ordinary skill in the art at

the time of the invention to include a compiler that translates high-Level source code

into compiler-generated program code. The modification would have been obvious

because one of ordinary skill in the art would have been motivated to translate high-

level source code into assembly level or machine level source code.

Response to Arguments

19.   Applicant's arguments filed 12/22/2008 have been fully considered but they are

not persuasive.

Applicant argues that the Siska teaches micro-routine collection is based on the

actual program to be compressed while the invention in contrast uses a predefined

library that is independent of the compiler generated program code that is to be

optimized and therefore is not taught by Siska. The examiner disagrees. First, it is

unclear as to what Applicant is arguing. The claims in their present form state that the

optimized program code is stored in a first memory area and the predefined library

which is independent of the compiler generated program code that is to be optimized is

stored in a second memory area. At least Fig. 2 demonstrates that the program having

the lines of code is stored in non-cache memory wherein the cache memory contains

the MCA table which has the table of common routines. (See also col. 13, lines 10-20).

In addition, Siska teaches that the common routine is 1) moved from the code and

stored in a table and 2) the position where the routine previously existed stores a call to

the routines new storage location (col. 11, lines 23-39). Therefore, the code and the

library are independent of each other. The remaining limitation details the compiler

generated program code is searched for program code fragments that perform the

same function as a respective one of the library code fragments. Siska after analyzing

the code a first time to generate the library / table, re-analyzes the source code another time to determine more source code entries (see fig. 3B, item 312; fig. 3C, item 312C) and col. 10, lines 37-47). Therefore, Siska teaches the recited limitation of searching program code fragments that perform the same function as a respective one of the library code fragments as outline herein.

Applicant argued that the Siska reference does not provide any flexibility for program changes or for the production of small batches of embedded systems. The examiner disagrees. The invention of Siska teaches removing the routine and replacing it with a micro-call, thus making program changes. It also details assisting embedded processors to avoid degrading their performance (col. 5, lines 33-36).

Applicant provides the same arguments regarding the 103 rejection and the examiner maintains these rejections in view of the response provided above.

Conclusion

20.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL YAARY whose telephone number is (571)270-1249. The examiner can normally be reached on Monday-Friday, 8:00 a.m - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis Bullock can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. Y./
Examiner, Art Unit 2193

/Lewis A. Bullock, Jr./
Supervisory Patent Examiner, Art Unit 2193